

Application No. 10/774,313
Reply to Office Action dated May 31, 2006

Amendments to the Drawings:

The attached sheets of drawings include changes to Figure 1. These sheets, which include Figs. 1-8, replace the original sheets including Figs. 1-8.

Attachment: Replacement Sheets

REMARKS

Drawings - Figure 1 has been amended to reflect that it is prior art and 8 sheets of drawings are presented herewith for approval.

Allowable Subject Matter

The Examiner is thanked for stating that claims 9, 11, 23-24 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Accordingly, applicants submit herewith new claims 26-29. New claim 26 corresponds generally to prior claims 1 and 9 combined. Claim 9 has been canceled. New claim 27 corresponds generally to claims 1 and 11 combined and claim 11 has been canceled. Claim 22 has been amended to include the limitations of claim 23 and claim 23 has been canceled. New claim 28 corresponds to prior claims 22, 23 and 24 combined and claim 29 corresponds generally to prior claims 22 and 24, combined.

Claim 1 has also been amended to include some of the features from claim 9 which was indicated allowable by the Examiner. The applicants believe that all claims, as now presented are patentable and the case should be passed to issue.

Rejections Under 35 U.S.C. § 112

The Examiner rejected claim 14 under 35 U.S.C. § 112 as being indefinite for lack of antecedent basis for “the third operating mode.” Applicants respectfully traverse the objection. Applicants have amended claim 14 to state “a third operating mode” instead of “the third operating mode.”

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1-8, 10, 12-22, and 25 as being unpatentable over Applicants’ Admitted Prior Art (AAPA) in view of Kosuda et al. (Kosuda) US Pub 2003/0070106. Applicants respectfully traverse the rejection.

Applicants believe that the claims should be allowed over the prior art. Specifically, Kosuda does not teach the claim features of the present invention claim 1 as amended. Kosuda fails to teach using the second clock signal as the main clock of the central processing unit to obtain an operating mode with reduced power consumption while the main oscillator is deactivated, as currently claimed in claim 1.

In Kosuda, paragraphs 0126 to 0136, switching into the Information Processing Operation mode comprises the activation of both oscillators (PLL oscillator and CR oscillator), control signals CNT3 and CNT4 being set to the “H” level. The clock signal provided by the CR oscillator is used during the stabilization time of the PLL oscillator only.

In Kosuda, paragraphs 0137 to 0149, the operation during declining of the power supply voltage comprises stopping the PLL oscillator but only because it is assumed that the PLL oscillator cannot function properly under a certain voltage. Thus using the CR oscillator instead of the PLL oscillator is only motivated by their respective rated voltages (nominal voltages) and not by consumption reasons (since paragraph 0105 states that a CR oscillator requires about four times more power consumption than a PLL oscillator, see below).

Contrary to what the Examiner asserts, the paragraph 0151 simply states that the use of a CR oscillator and of a PLL oscillator simultaneously allows a low consumption and a short waiting time for stable oscillation. This paragraph must be construed in connection with paragraphs 0105 and 0106 where it is explained that a CR oscillator requires about four times more power consumption than a PLL oscillator. Thus, the “low consumption” according to Kosuda is only obtained thanks to the fact that the CR oscillator is stopped once the PLL oscillator is stabilized (*see* paragraph 0135) and not to the fact that a CR oscillator is used instead of a PLL oscillator.

This teaching goes exactly on an opposite way to that of the invention, wherein the second oscillator used at the wakeup of the microprocessor is a low consumption oscillator. There is an apparent technical contradiction between both documents in that the present application asserts that a CR oscillator or a ring oscillator has a low current consumption compared to a PLL oscillator whilst Kosuda says the opposite (independently of the frequency of the clock signal, which also acts upon the electrical consumption in a CMOS microprocessor).

In addition, claim 1 has been amended to confirm one of the features from claim 9 which is that there is a transient state in which the management circuit does not provide any clock signal at all, but rather provides a clock output set to a selected voltage level so as to avoid interference upon the switch transition between the two clock signals. This feature is also not found in Kosuda and is a further reason for patentability beyond the reasons as discussed.

The remaining independent claims, claims 18 and 22, have been amended to include features which have been previously indicated as allowable by the Examiner.

As the Examiner has stated that claim 9 would be allowable if rewritten in independent form including all of the limitations of the base claim and intervening claims, claim 1 has been amended to claim all of the features of claim 9 in addition to those features originally claimed. Applicants have canceled claim 9. Applicants respectfully submit that as independent claim 1 is now allowable over the prior art, dependent claims 2-8, 10-17 are also allowable.

Independent claim 18 has also been amended to claim the main features of claim 9. No combination of the prior art teaches the features of claim 18 combined with claim 9. Applicants therefore respectfully submit that claims 18-21 are allowable.

As the Examiner has stated that claim 23 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, Applicants have amended independent claim 22 to claim the main features of claim 23 and has canceled claim 23. Applicants respectfully submit that claims 22 and 25 are allowable.

Conclusion

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Therefore, Applicants respectfully request that the Examiner reconsider this application and allow all pending claims. Examiner Connolly is encouraged to contact the undersigned by telephone to discuss the above distinctions between the claims and the applied references, if desired, or informalities in the claims, if any.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

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All of the claims remaining in the application are now clearly allowable.
Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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Enclosure:

8 Replacement Sheets of Replacement Drawings (Figures 1-8)

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